

An aerial photograph of a tropical cyclone, showing a well-defined eye and a dense, swirling cloud structure over the ocean. The eye is a small, dark, circular area in the center of the storm. The surrounding clouds are thick and white, with a distinct spiral pattern. The ocean surface is visible in the background, showing a dark blue color. The text "NAVSTA Newport Tropical Cyclone Brief" is overlaid in large, bold, yellow letters with a black outline.

# **NAVSTA Newport Tropical Cyclone Brief**

**NAVSTA Newport Emergency Management**

# ***Overview***

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- ***TROPICAL CYCLONE  
CHARACTERISTICS***
- ***CLIMATOLOGY***
- ***STORM SURGE***
- ***WARNINGS / CONDITIONS OF  
READINESS***
- ***PREPARATION***

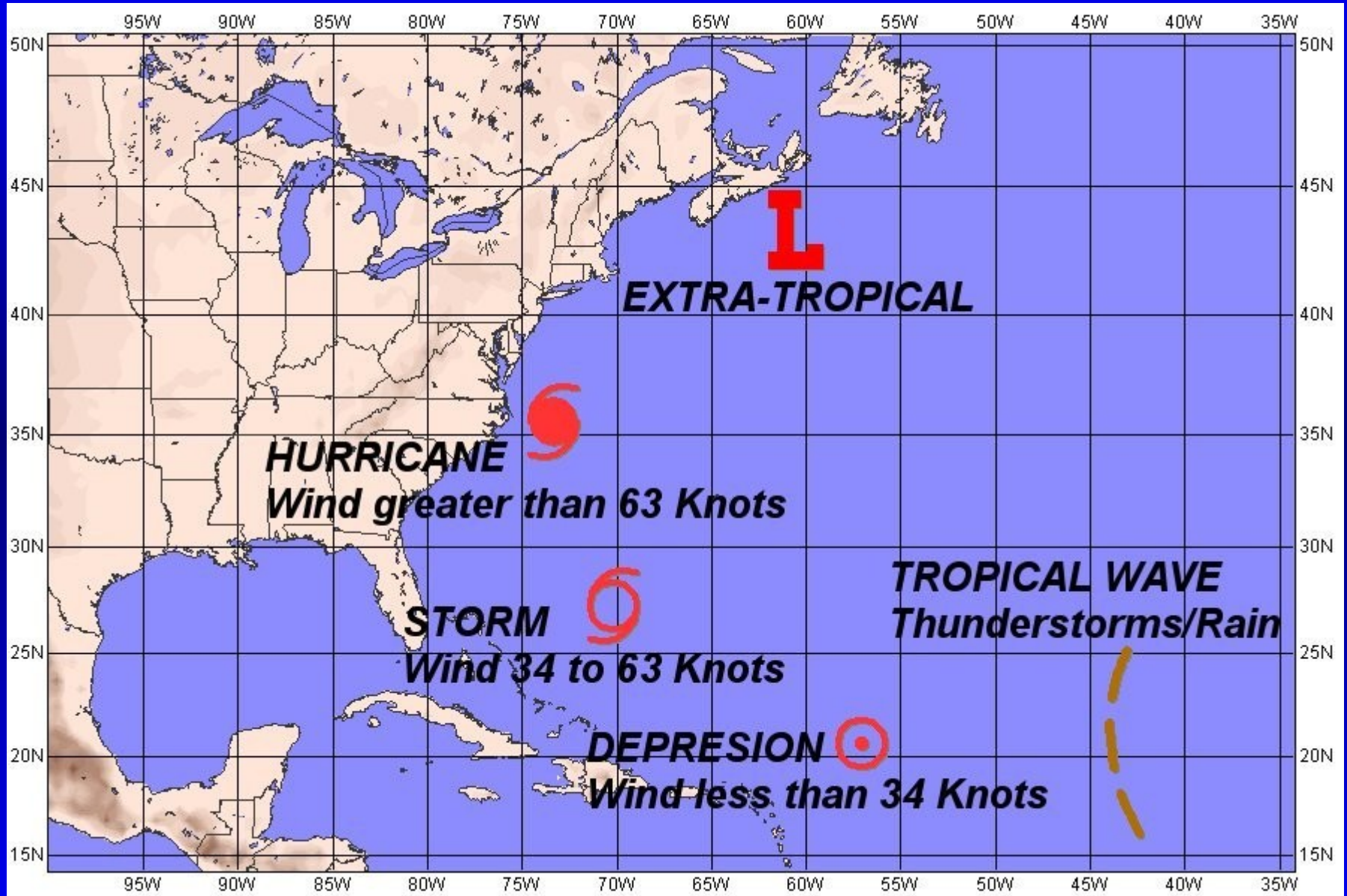
# ***Tropical Cyclone Characteristics***

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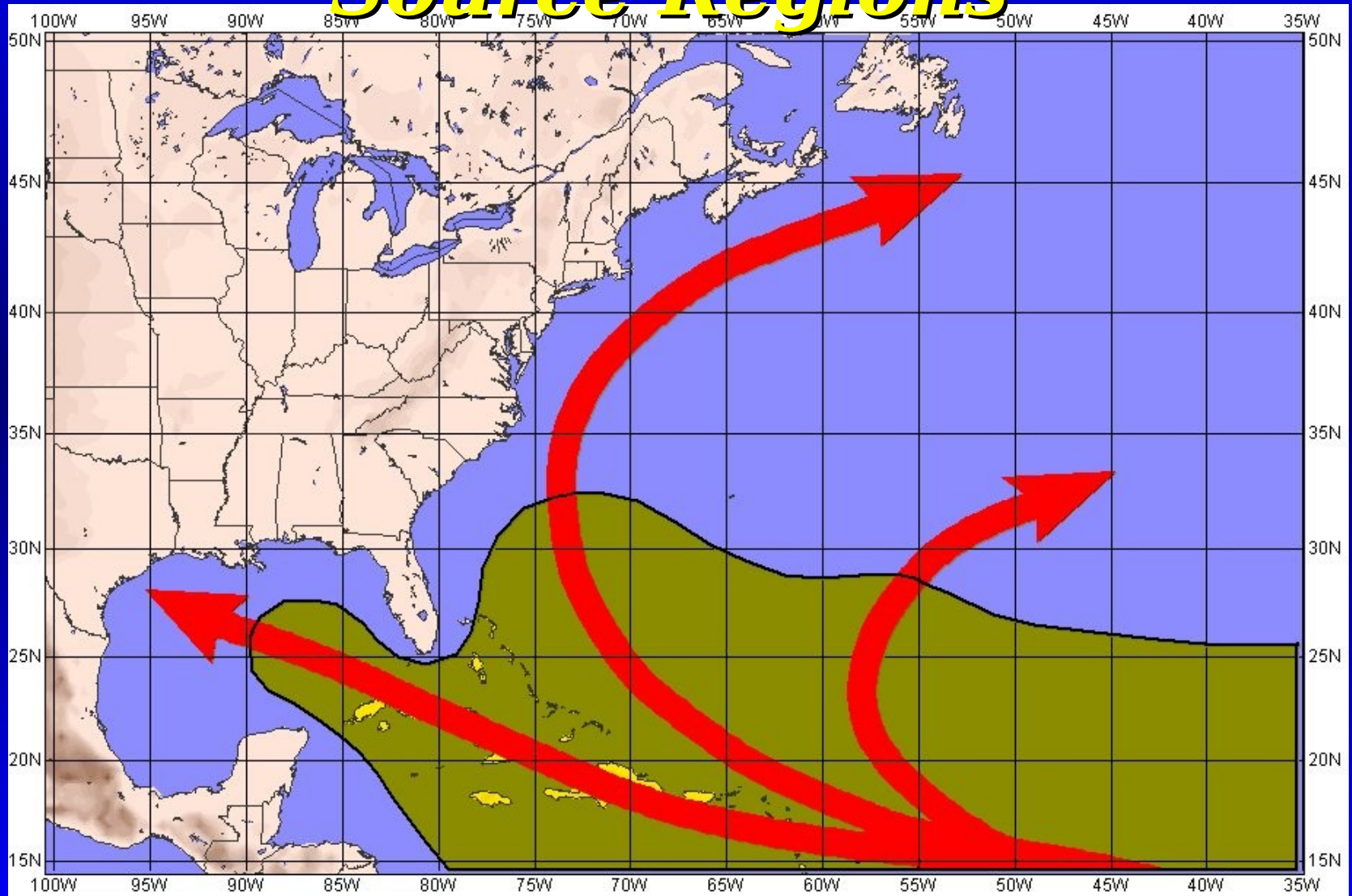
- **WARM WATER (>80 DEG F)**
- **ORGANIZED CIRCULATION**
- **MOVEMENT W (10-15 KTS) -- N (25-45 KTS)**
- **CLASSIFICATION**
- |                   |                    |
|-------------------|--------------------|
| <b>DEPRESSION</b> | <b>&lt;34KTS</b>   |
| <b>STORM</b>      | <b>34 - 63 KTS</b> |
| <b>HURRICANE</b>  | <b>64+ KTS</b>     |



# ***Life Cycle of Tropical Systems***



# ***Tropical Cyclone Paths and Source Regions***



# ***Saffir-Simpson Scale***

<b>CATEGORY</b>	<b>WINDS (KTS)</b>	<b>SURGE (FT)</b>	<b>DAMAGE</b>
<b>1</b> <b>MINOR</b>	<b>64-82</b>	<b>4-5</b>	
<b>2</b> <b>TREES, ROOFS</b> <b>MOBILE HOMES</b>	<b>83-95</b>	<b>6-8</b>	
<b>3</b> <b>STRUCTURAL</b> <b>DAMAGE</b>	<b>96-113</b>	<b>9-12</b>	
<b>4</b> <b>SIGNS, WINDOWS</b> <b>EXTENSIVE DAMAGE</b>	<b>114-135</b>	<b>13-18</b>	

**1**  
**MINOR**

**64-82**

**4-5**

**2**  
**TREES, ROOFS**  
**MOBILE HOMES**

**83-95**

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**3**  
**STRUCTURAL**  
**DAMAGE**

**96-113**

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**4**  
**SIGNS, WINDOWS**

**114-135**

**13-18**

**EXTENSIVE DAMAGE**

# ***Newport Tropical Cyclone Threat Climatology***

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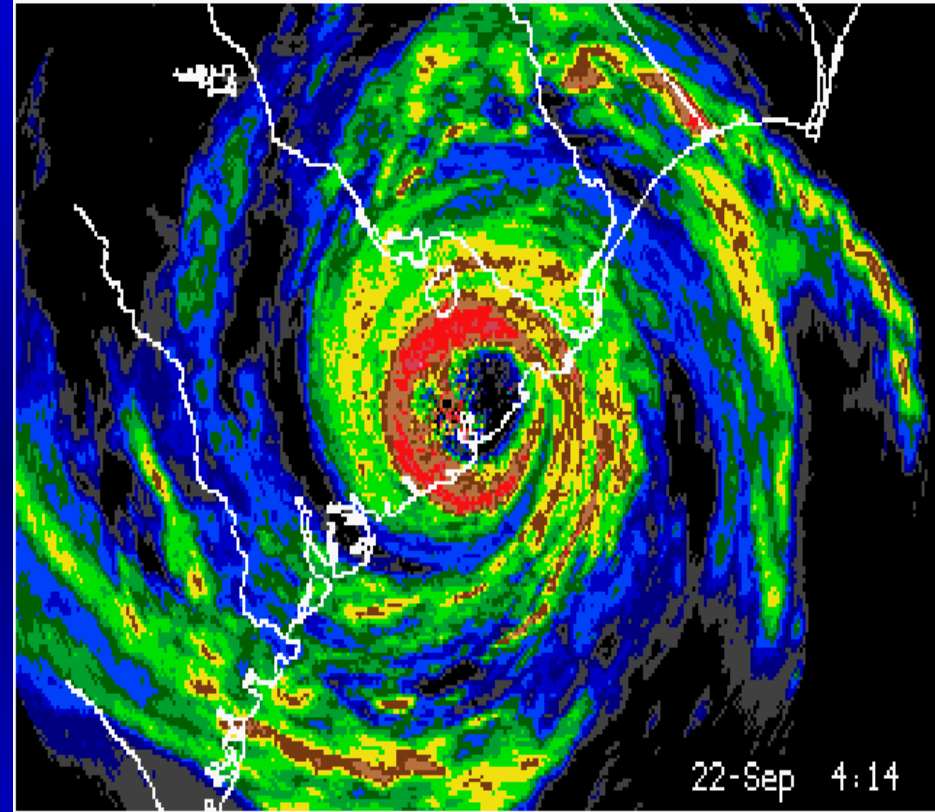
- ***THREAT SEASON JUNE - NOVEMBER  
ON AVERAGE 1 TROPICAL CYCLONE PASSES WITH 180  
NM***
- ***OF ALL TROPICAL CYCLONES THREATENING  
NEWPORT  
BTWN 1886 AND 1979, 85% OCCURRED IN THE  
MONTHS  
OF AUGUST THRU OCTOBER***
- ***MAJOR THREAT DIRECTION IS FROM THE SOUTH  
AND SOUTHWEST.***
- ***FROM 1936 TO 1996, 34 HURRICANES OR TROPICAL  
STORMS  
AFFECTED THE RHODE ISLAND AREA***



# ***Storm Surge***

**Abnormal rise of the sea in advance/with the cyclone formed by the cyclone's onshore winds to the right of the cyclone center and low pressure near the cyclone's center.**

**“WALL OF WATER”**



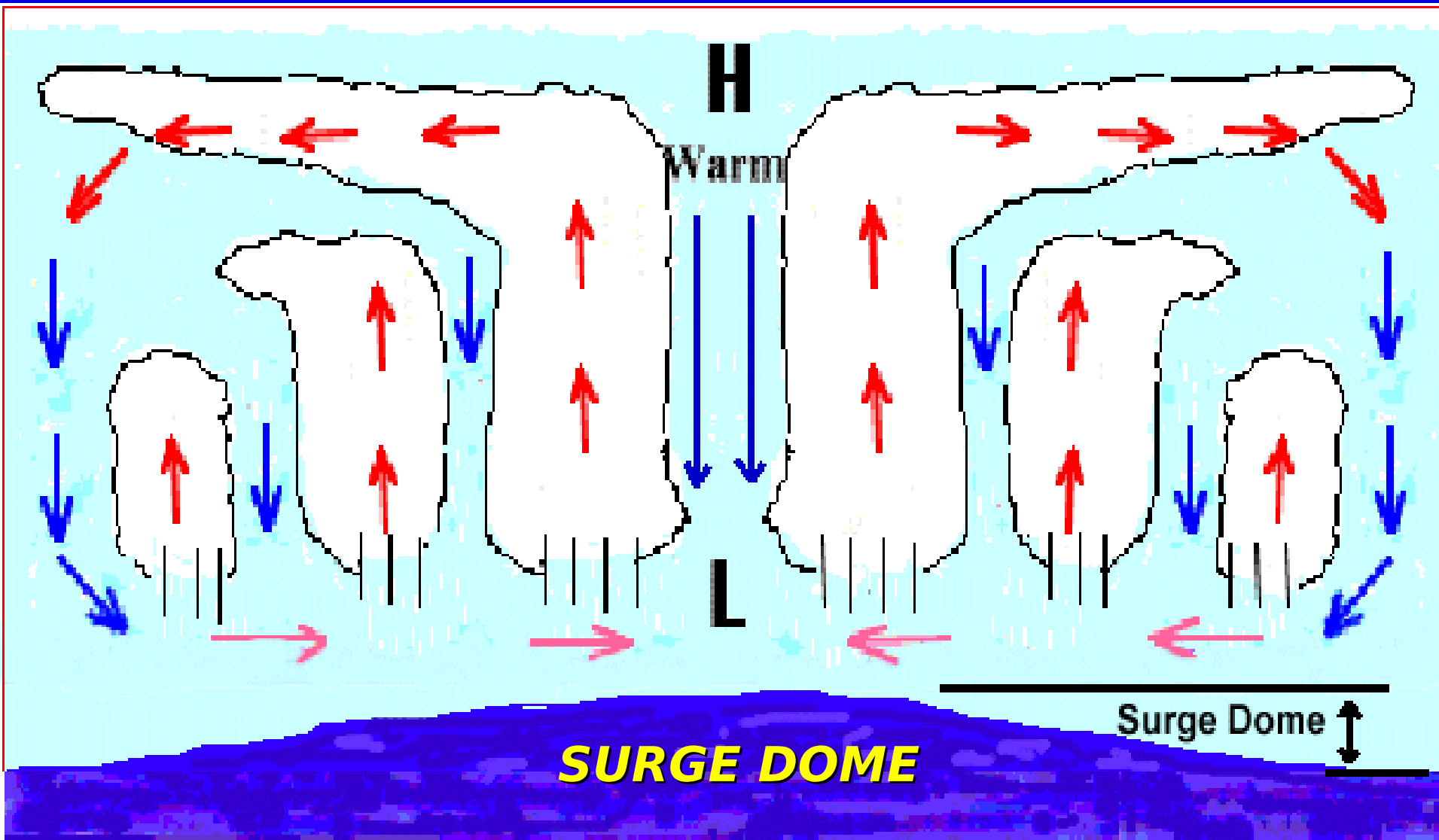


# ***Storm Surge***

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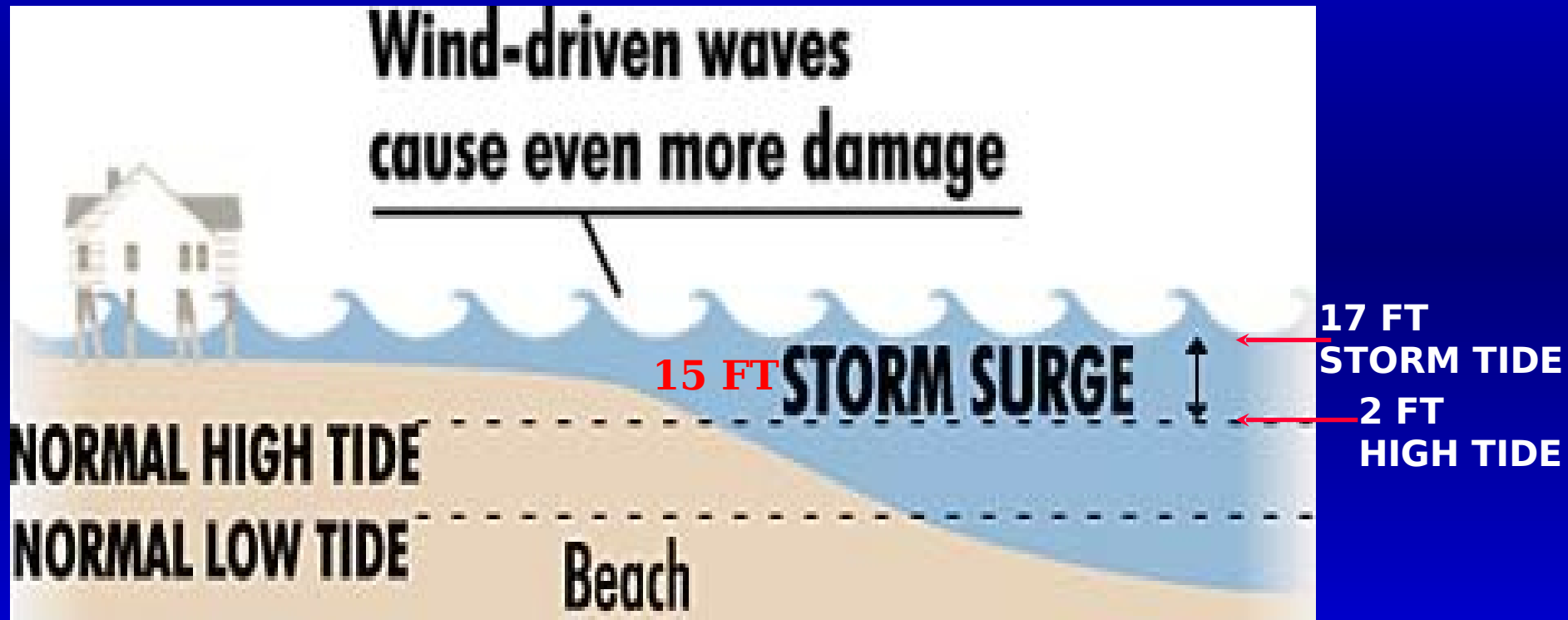
- ***STORM SURGE - COMBINED EFFECT OF HIGH  
WATER AND HIGH WINDS***
- ***CONSIDERATIONS:***  
***TRACK OF STORM LEFT OR RIGHT OF NEWPORT***  
***CLOSEST POINT OF APPROACH (CPA) TO NEWPORT***  
***TIME OF HIGH/LOW TIDE***
- ***PROBLEMS:***  
***FLOODING/BEACH EROSION***  
***STRUCTURAL DAMAGE***  
***SMALL CRAFT AT MARINA***

# ***Storm Surge***



# ***Storm Surge***

**Category IV Hurricane (114-135 KTS/13 to 18 FT) surge**





# ***Significant Storm Surge Affecting Newport***

<u>DATE</u>	<u>STORM</u>	<u>WTR LEVEL ABV MSL (NPT)</u>
SEP 1938	HURRICANE	10.8
AUG 1954	CAROL	9.8
SEP 1944	HURRICANE	8.0
SEP 1985	GLORIA	6.6
AUG 1991	BOB	6.5





















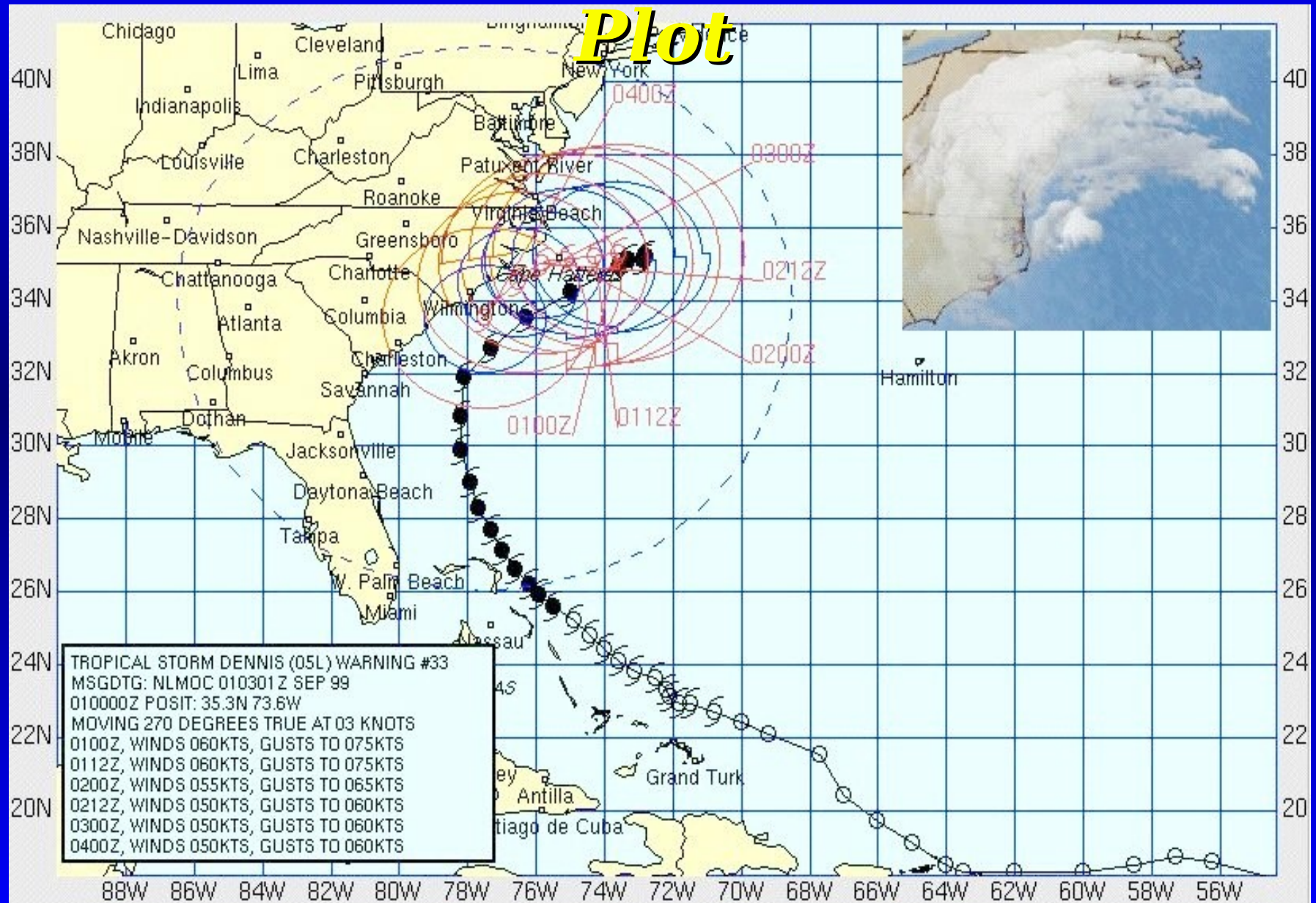








# Example of a Tropical Storm Plot





# CONDITIONS OF READINESS (COR)

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## ❖ **CONDITIONS BASED ON ONSET OF WINDS > 50KTS**

- ♦ COR V - POSSIBLE WITHIN 96 HRS
- ♦ COR IV - POSSIBLE WITHIN 72 HRS
- ♦ COR III - POSSIBLE WITHIN 48 HRS
- ♦ COR II - ANTICIPATED WITHIN 24 HRS
- ♦ COR I - ANTICIPATED WITHIN 12 HRS



# ***1938 Hurricane***

- ***Winds: 121 mph gusts to 186 mph***
- ***Storm Surge: Narragansett Bay  
12-15 foot  
Downtown Providence submerged  
New Bedford submerged***
- ***Widespread flooding due to storm  
surge & heavy rains.***

# ***1938 Hurricane***

➤ **Deaths: 564      Injuries:  
>1700**

➤ **Boating Impact:**

**Destroyed: 2,600**

**Damaged: 3,300**

➤ **Homes/Buildings**

**Destroyed: 8900**

**Damaged: 15,000**





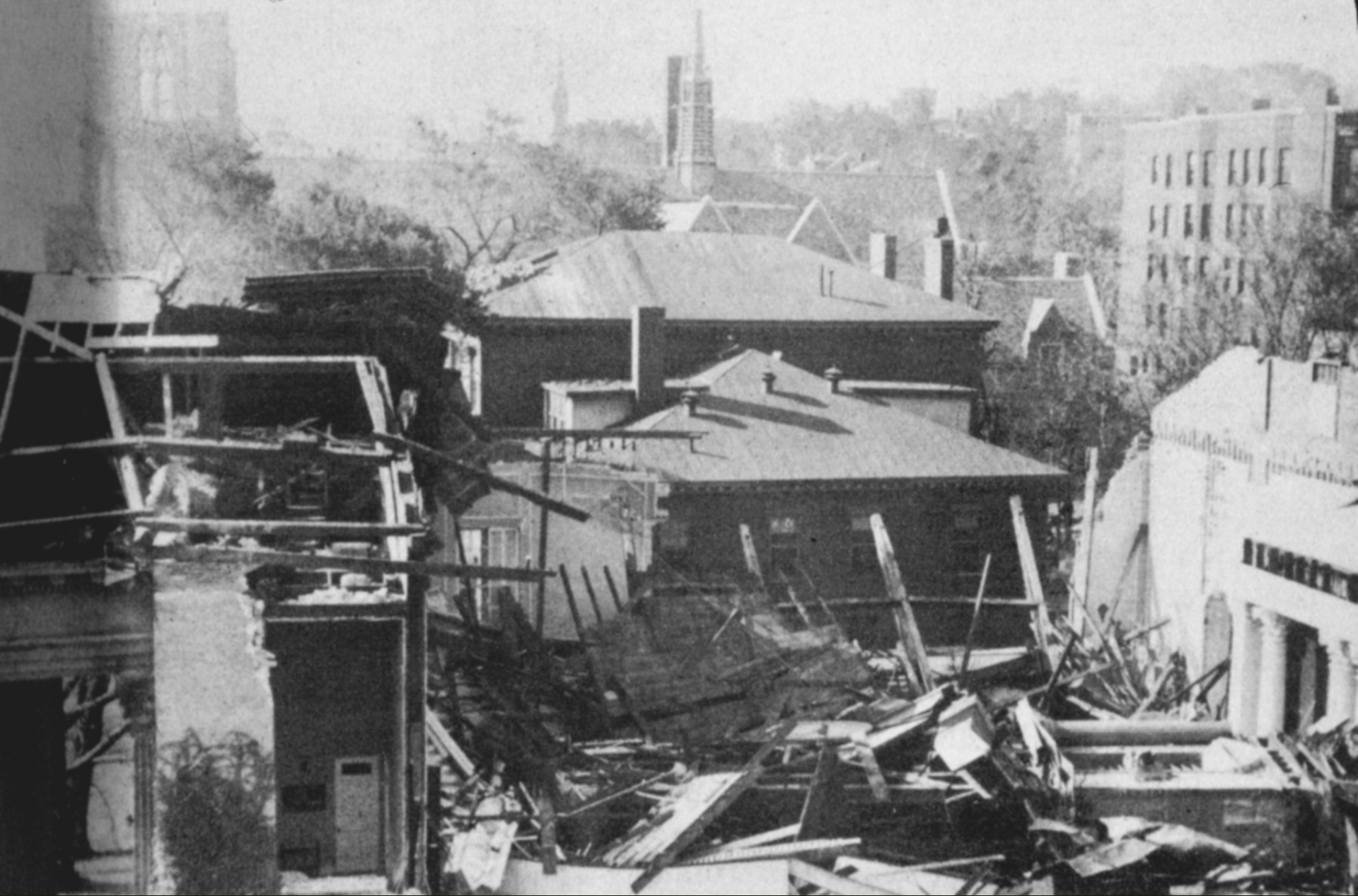
**All that remained of a beachf  
home at Third Beach**







**Island Park (Portsmouth) was destroyed by a breaker with a r  
height of 30 to 40 feet.**



**Remains of the steeple of the First Unitarian Church in Worcester, Massachusetts, after the 1906 San Francisco earthquake.**





**Island Park (Portsmouth) was destroyed by a breaker with a reported height of 30 to 40 feet.**

**A sturdy washing machine is all that remains of a destroyed home**

# ***Preparations - Before Storm***

- **Plan for Evacuation**
  - Plan Route**
  - Plan for Emergency Shelter**
- **Have Disaster supplies on hand**
  - Flashlight/batteries**
  - Battery operated radio**
  - First aid kit**
  - Food/water**
  - Can opener (non electric)**
  - Medicines**
  - Cash/credit cards**
- **Flood Insurance**

# ***During Hurricane Watch***

- **Check supplies**
- **Fuel car**
- **Secure outdoor missile hazards (lawn furniture, etc...)**
- **Turn refrigerator/freezer to coldest settings and leave closed**
- **Store drinking water in clean bathtubs, jugs and bottles**

# ***During Hurricane Warning***

- Listen for official updates/instructions
- Store valuables/personal papers in a waterproof container
- Stay inside away from windows, skylight and glass doors.
- Keep flashlights/extra batteries handy.  
**DO NOT USE CANDLES/OPEN FLAMES!!**
- If power is lost, turn off appliances to reduce surge when power is restored



# ***Evacuation***

- **If officials indicate evacuation is necessary.....LEAVE**
- **Leave ASAP, avoiding flooded roads**
- **Bring emergency supplies and warm clothing**
- **Lock up home and leave.**
- **No pets at shelters**

# ***Summary***

- **Prepare**
- **Know the buzzwords**
  - Tropical Storm/Hurricane**
  - Watches/Warnings**
- **Listen**
  - Radio, TV for weather forecasts and updates**
- **Be ready to evacuate**
  - Listen to local authorities**

# ***Summary***

- **Make a plan**

  - Develop a family plan/disaster supplies kit**

- **Learn to shut off**

  - Know where and how to shut off electricity, gas and water**

- **Batten down**

  - Protect your property, family and yourself**

# ***NAVSTA Newport Emergency Management Contacts***

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